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PEACHES, RANDY	
ART UNIT	**PAPER NUMBER**
2686	4

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/771,474	SENTZ, DONALD R.	
	Examiner	Art Unit	
	Randy Peaches	2686	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14 and 16-17* is/are rejected.

7)☒ Claim(s) *15 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. ***Claims 1-2, 4-5, 7-11, and 16-17*** are rejected under 35 U.S.C. 102(b) as being anticipated by Ayyagari (PN 6018659).

Regarding ***claim 1***, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory",

for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and***
- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller",

coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture.

Regarding ***claim 2***, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);
- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after

said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and***; and

- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;

- the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122) individually having control, which reads on claimed "exercising control", over the assigned hopping beam of the transmitting AV (106); which is slave to the MU's (122) tracked position, by generating the updated said MU's (122) positions. Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking place, the said AV (106) updates and adjust accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

Regarding ***claim 4***, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle

(106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);
- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according

to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and***; and

- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;
- Ayyagari teaches in column 2-3 lines 61-67 and lines 1-15 respectively, that a predetermined Time Division Access (TDMA) transmission scheme, which reads on claimed "access schedule", determines when the process of the transmitting and receiving of information, e.g. position update information, between the said AV (106) and said MU (122) shall occur;
- the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122)

individually having control, which reads on claimed “exercising control”, over the assigned hopping beam of the transmitting said AV (106), which is slave to the said MU’s (122) tracked position. The time that is allotted for information to be transmitted between the said AV (106) and said MU (122) is determined by the pre-determined transmission scheme, which reads on claimed “access schedule”. See column 2-3 lines 61-67 and lines 1-15 respectively.

Regarding ***claim 5***, Ayyagari discloses of a method for providing broadband communication, which reads on claimed “communication bandwidth”, with AV (106), which reads on claimed “communication satellite”, the method comprising:

- each said AV (106) is equipped with, as disclosed in column 15 lines 14-38, a mobility management functionality and hardware for wireless communication to the said MU’s (122) once a connection is established in accordance to the process referenced in column 6 lines 26-44. The said AV (106) reads the said MU’s (122) position, which reads on claimed “communication target” positions from the tables (HA or FA) contained in the two databases, which reads on claimed “position memory”;
- steering an electronically steered said PAA (132,134,136), which reads on claimed “antenna”, in accordance with the said MU’s (122), which reads on claimed “target”, position;

- ***receiving an updated said MU's (122) positions in an established uplink with either an active or passive scheme. See columns 6 and 9 lines 44-50 lines 57-64, respectively;*** and
- in either active or passive tracking, which reads on claimed "tracking", of said MU's (122) position based on updated said MU's (122) positions, as referenced in column 15 lines 47-50.

Regarding ***claim 7***, Ayyagari discloses of a method for providing broadband communication, which reads on claimed "communication bandwidth", with AV (106), which reads on claimed "communication satellite", the method comprising:

- each said AV (106) is equipped with, as disclosed in column 15 lines 14-38, a mobility management functionality and hardware for wireless communication to the said MU's (122) once a connection is established in accordance to the process referenced in column 6 lines 26-44. The said AV (106) reads the said MU (122), which reads on claimed "communication target" positions from the tables (HA or FA) contained in the two databases, which reads on claimed "position memory";
- steering an electronically steered said PAA (132,134,136), which reads on claimed "antenna", in accordance with the said MU's (122), which reads on claimed "target", position;

- ***receiving an updated said MU's (122) positions in an established uplink with either an active or passive scheme. See columns 6 and 9 lines 44-50 lines 57-64, respectively;*** and
- in either active or passive tracking, as referenced in column 15 lines 47-50, which reads on claimed "tracking", of said MU's (122) position based on updated said MU's (122) positions, and steering in accordance with at least one data channel of a predetermined Time Division Multiplexed Access (TDMA) for said MU (122) as taught by Ayyagari in column 3 lines 3-10.

Regarding ***claim 8***, Ayyagari teaches of a system (100), which reads on claimed "communication system", comprising:

- a plurality of mobile geographical areas (109), which reads on the claimed "cells", including a first geographical area (109) assigned to a single first said MU (122) and a second geographical area (109) assigned to a single said MU (122);
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing a first said geographical area (109) position determined by the first said MU (122) and associated with the first said geographical area (109)***, after a registration of the said MU occurs, as taught in column 15 lines 40-44, in which the said registration procedure is previously described in column 9***

lines 25-27, where the said MU's position information is transmitted to the said AV via a pre-determined TDMA channel or slot, which reads on claimed "assigned uplink time slot", as taught in column 12 lines 24-26, and a second said geographical area (109) determined by the second MU (122) and associated with the second geographical area (109), ***after a registration of the said MU occurs, as taught in column 15 lines 40-44, in which the said registration procedure is previously described in column 9 lines 25-27, where the said MU's position information is transmitted to the said AV via a pre-determined TDMA channel or slot, which reads on claimed "assigned uplink time slot", as taught in column 12 lines 24-26;***

- an electrically steer-able PAA (132,134,136), which reads on claimed "antenna", for generating the first geographical area (109) and the second geographical area (109) as referenced in FIGURE 2; and
- a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and the said two databases, the said phase controller steering the said PAA (132,134,136), as taught by Ayyagari in column 7 lines 31-41, in accordance with a predetermined transmission scheme, which reads on claimed " access schedule. See column 3 lines 2-15.

Regarding ***claim 9***, Ayyagari teaches of a system (100), which reads on claimed "communication system", comprising:

- a plurality of mobile geographical areas (109), which reads on the claimed "cells", including a first geographical area (109) assigned to a single first said MU (122) and a second geographical area (109) assigned to a single said MU (122);
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing a first said geographical area (109) position determined by the first said MU (122) and associated with the first said geographical area (109)***, after a registration of the said MU occurs, as taught in column 15 lines 40-44, in which the said registration procedure is previously described in column 9 lines 25-27, where the said MU's position information is transmitted to the said AV via a pre-determined TDMA channel or slot, which reads on claimed "assigned uplink time slot", as taught in column 12 lines 24-26,*** and a second said geographical area (109) determined by the second MU (122) and associated with the second geographical area (109)***, after a registration of the said MU occurs, as taught in column 15 lines 40-44, in which the said registration procedure is previously described in column 9 lines 25-27, where the said MU's position information is transmitted to the said AV via a pre-determined TDMA channel or slot, which reads on claimed "assigned uplink time slot", as taught in column 12 lines 24-26;***an electrically steerable PAA (132,134,136), which reads on claimed "antenna", for generating the first

geographical area (109) and the second geographical area (109) as referenced in FIGURE 2; and

- a phase controller, which reads on claimed "antenna controller, coupled to the said PAA (132,134,136) and the said two databases, the said phase controller steering the said PAA (132,134,136), as taught by Ayyagari in column 7 lines 31-41, in accordance with a predetermined transmission scheme, which reads on claimed "access schedule" (see column 3 lines 2-15), the said phase controller being further responsive to an updated first geographical area (109) position from the first said MU (122) to adjust (see column 9 line 42), which reads on claimed "steer", the said PAA (132,134,136) to the updated first said geographical area (109), the updated first said geographical area (109) position replacing the first said geographical area (109) position in the AV's (106) two databases, which reads on claimed "position memory". As referenced in, column 15 lines 24-61, where the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table.

In regards to the position updating process performed by said MU's (122), Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking place, the said AV (106) updates and adjust accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in

column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

Regarding ***claim 10***, the system (100), which reads on claimed "communication system", of ***claim 9***, wherein the phase controller, which reads on claimed "antenna controller", is responsive to and updated second geographical area (109), which reads on claimed "cell", position from the second said MU (122) to adjust (see column 9 line 42), which reads on claimed "steer", the said PAA (132,134,136), to the updated second said geographical area (109), the updated second said geographical area (109) position replacing the second said geographical area (109) position in the AV's (106) database, which read on claimed "position memory".

Regarding ***claim 11***, the system (100), which reads on claimed "communication system", of ***claim 9***, wherein the predetermined access schedule, as taught by Ayyagari in FIGURE 15 column 7 lines 56-61, is a time division multiplexed access (TDMA) schedule.

Regarding ***claim 16***, according to ***claim 9***, Ayyagari continues to disclose wherein a said AV is operative to redirect its respective cell to a different communication target. See column 5 lines 17-29.

Regarding ***claim 17***, according to ***claim 9***, Ayyagari continues to disclose wherein a said AV is operative to redirect its respective cell of a predetermined time and until a command to return back to the fist said communication target is received by the antenna. See column 5 lines 17-29.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. ***Claims 3 and 6*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari (PN 6018659) in view of Agre (PN 5946618).

Regarding ***claim 3,*** Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);
- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said***

AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and

- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture;
- the said PAA (132,134,136) generating hopping beams or RF beams, which reads on claimed "beam spots", providing dedicated data links, as referenced in column 6-7 lines 65-67 and lines 1-2 respectively, to the said MU's (122). Additionally, as disclosed in column 6 lines 15-18, the said MU's (122) individually having control, which reads on claimed "exercising control", over the assigned hopping beam of the transmitting AV (106), which is slave to the MU's (122) tracked position, by generating the updated said MU's (122) positions. Ayyagari teaches in column 9 lines 25-43, of a passive tracking technique where the said AV's (106) receive hopping or RF beam is "stepped" around the said MU's (122) true position each time it is addressed in the TDMA cycle. While the "stepping" process is taking place, the said AV (106) updates and adjust

accordingly to the MU's (122) position by comparing, as disclosed by Ayyagari in column 9 lines 37-43, a upper and lower hopping beam or RF beam threshold limits, wherein the said MU's (122) signal strength of the hopping beam or RF beam is analyzed below or above the set threshold limits. If the threshold conditions are met, the said AV (106) updates its said databases to include the new location of the tracked said MU (122).

However, Ayyagari does not disclose that the communication target position comprises latitude and longitude positions.

Agre teaches in column 13-14 lines 59-67 and lines 1-4 respectively, that subscriber units, which reads on claimed "communication target", can represent said subscriber unit's GPS-based position in any suitable manner including latitude and longitude components.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Ayyagari to include a method of representing said subscriber unit's position in longitude and latitude coordinates as taught by Agre, in order to accurately represent the terrestrial object's position for optimal communication with the celestial communication satellite.

Regarding ***claim 6***, Ayyagari discloses the limitations of ***claim 5***. However, Ayyagari does not disclose that, which reads on claimed "the receiving comprises receiving latitude and longitude positions".

Agre teaches in column 13-14 lines 59-67 and lines 1-4 respectively, that subscriber units, which reads on claimed “communication target”, can represent said subscriber unit's GPS-based position in any suitable manner including latitude and longitude components.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify Ayyagari to include a method of representing said subscriber unit's position in longitude and latitude coordinates as taught by Agre, in order to accurately represent the terrestrial object's position for optimal communication with the celestial communication satellite.

3. ***Claims 12-14*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ayyagari (PN 6018659) in view of Sklar et al (PN 5990928).

Regarding ***claim 12***, according to ***claim 1***, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed “communication path processing system”. Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed “communication satellite”, hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;

- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);
- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels,***

as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and

- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed “antenna controller”, coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA (132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA’s (132,134,136) architecture.

However, Ayyagari does not teach of a processing system being operative to redirect an antenna to a second communication target based on the communication target update information from a first communication target.

Sklar et al discloses in column 3 lines 18-28 of a method of redirecting a communication antenna of an aircraft, which reads on claimed "communication target", from a first satellite, which reads on claimed "first communication target", to a second satellite, which reads on claimed "second communication target". The operational functionality is based on the position information of said aircraft relative to the communication satellites.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify the teaching of Ayyagari (PN 6018659) to include Sklar et al (PN 5990928) in order to provide a means to redirect a communicating antenna from a first communication’s target position to a second communication target position relative to the position of the said first communication target position.

Regarding ***claim 13***, as the combination of Ayyagari (PN 6018659) and Sklar et al (PN 5990928) are made, the combination according to ***claim 12***, Sklar et al discloses in columns 9 and 10 lines 53-67 lines 1-12, of a system operable to redirect the said antenna from a said first satellite to a said second satellite for one of a predetermined time and until a command to return back to the said first satellite and vice versa.

Regarding ***claim 14***, according to ***claim 1***, Ayyagari teaches of a system (100), as exhibited in FIGURE 1, which reads on claimed "communication path processing system". Ayyagari discloses, as referenced in FIGURE 4, of a system (100) for a communication airborne vehicle (106), which reads on claimed "communication satellite", hereinafter referenced as AV (106), comprising of:

- an electronically steered phase array antenna (132), hereinafter referenced as PAA (132,134,136). See FIGURE 4, column 6 and 7 lines 13-15 and 10–11, respectively;
- as referenced in FIGURE 17, column 15 lines 24-61, the said AV (106) contains two databases: Home Location Register (HLR) or equivalently a home agent (HA) AV (106) table and a Visitor Location Register (VLR) or equivalent a Foreign Agent (FA) AV (106) table, which reads on claimed "position memory", for storing and registering mobile unit (122) position, which reads on claimed "communication target", hereinafter referenced as MU (122);

- a central processing unit (CPU)(130), which reads on claimed "processor", hereinafter referenced as CPU (130), is coupled to the said two databases. The said CPU (130) is operable to track and process said MU's (122) position after said MU (122) has initially registered***, which reads on claimed "communication target's transmitting updated communication target position",*** its position with said AV (106). ***See columns 6 and 9 lines 57-62 lines 25-28, respectively.*** Additionally, as referenced in column 9 lines 25-50, the said AV (106) can either perform one of two tracking techniques, passive or active. Once a link between the said AV (106) and the said MU (122) is established, the said MU (122), as referenced in column 8 lines 55-57, can then transmit its current and updated location via an out-of-band order wire according to a predetermined access schedule. ***The access schedule includes the uplink time for which the said MU (122) may submit information to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle; and***
- as referenced in FIGURE 4 columns 5-7 line 67, lines 1-3, and lines 24-27 respectively, a phase controller, which reads on claimed "antenna controller", coupled to the said PAA (132,134,136) and to the said CPU (130); wherein the said CPU (130) generates steering control signals for the said PAA

(132,134,136) in accordance to the information generated by the position mechanism (138) of the said PAA's (132,134,136) architecture.

However, Ayyagari fails to disclose a method that provides a plurality of different services to a communication target based on receiving a request for one of the said plurality of different services.

Sklar et al teaches in column 2 lines 50-66 of a satellite based distribution system in which the said aircraft tracks to provide programming choices/channels to users requesting (see column 11 lines 25-55) to view channels, which reads on claimed "different type of services", indicative of being broadcasted by the respected said first or second communication target.

Therefore, at the time of the invention it would have been obvious to a person of ordinary skilled in the art to modify the teaching of Ayyagari (PN 6018659) to include Sklar et al (PN 5990928) in order to provide programming channels or services to a said communication target based on the request of services from a respected user.

Allowable Subject Matter

Claims 15 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed March 4, 2004, have been fully considered but they are not persuasive.

Regarding ***claims 1-2, 4-5, 7-11,*** after further examination the Examiner concludes that Ayyagari does indeed satisfy the amended claim language according to the respected applicant. ***Ayyagari teaches in column 12 lines 24-26, that the access schedule includes the uplink time for which the said MU (122) may submit information, which reads on claimed "position information", to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle.***

Additionally, regarding ***claim 8,*** the applicant references the fact that the cited reference Ayyagari teaches of a fixed cell over a fixed geographical area. The Examiner concludes that the argument is not persuasive based on the disclosed information in column 5 lines 24-29 where Ayyagari teaches of the said AV's ability to relocate the cell coverage area as directed by the Operation Control Center.

Regarding ***claims 3 and 6*** after further examination the Examiner concludes that Ayyagari does indeed satisfy the amended claim language according to the respected applicant. ***Ayyagari teaches in column 12 lines 24-26, that the access schedule includes the uplink time for which the said MU (122) may submit information,***

which reads on claimed "position information", to the said AV (106). Ayyagari teaches in column 12 lines 24-26, that the said MU's (122) are permitted to transmit only during the allocated transmit channel periods to, which reads on claimed "uplink information". These channels, as described by Ayyagari in column 11 lines 61-62, are sub-divided slots within a TDMA cycle.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. **US 6,625,129 B1** – Demand Assigned Spatial Multiplexing in Satellite Communication Systems

b. **US 5,483,664** - Cellular Communication with Scheduled Handoffs

c. **US 6,148,196** – Remote Control and Location System

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Peaches whose telephone number is (703) 305-8993. The examiner can normally be reached on Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha D. Banks-Harold can be reached on (703) 305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Randy Peaches
May 24, 2004

NAY MAUNG
SUPERVISORY PATENT EXAMINER